

Serial No. 10/085,527

Atty. Doc. No. 99P03591WOUS

Amendments To the Claims:

Please amend the claims as shown. Applicant reserves the right to pursue any canceled claims at a later date.

1. (currently amended) A method for the surface preparation of a metal component having a curved surface to accept a ceramic coating, comprising:
obtaining a desired contour line geometry data for the metal component;
measuring a an actual contour line geometry of the curved surface;
inputting the ~~measured~~ actual geometry data into a control system;
comparing the actual geometry data with the desired contour line geometry data; and
controlling a plurality of spray parameters of ~~the ceramic coating a spray jet~~ via the control system based on the comparison of the actual geometry data and the desired contour line geometry data to direct a particle source toward the metal component, the spray parameters comprising: a blasting distance, a blasting intensity, a blasting angle and a blasting time such that at least one of the parameters remains constant during the surface preparation.
2. (previously presented) The method as claimed in claim 1, wherein at least one of the spray parameters automatically remains constant during the spraying operation by the control system.
3. (previously presented) The method as claimed in claim 1, wherein the metal is a superalloy.
4. (previously presented) The method as claimed in claim 1, wherein the blasting distance of the particle source to the component remains constant.
5. (previously presented) The method as claimed in claim 1, wherein the particle source is moved relative to the metal component so that the blasting angle remains constant.

Serial No. 10/085,527**Atty. Doc. No. 99P03591WOUS**

6. (previously presented) The method as claimed in claim 1, wherein the component has a base body with a base material, the base body having the component surface which, for a first coating to be applied to the base body, is treated with a first coating material.

7. (previously presented) The method as claimed in claim 6, wherein the first coating material used is an MCrAlX alloy, where M represents one or more elements comprising iron, cobalt and nickel, Cr represents chromium, Al represents aluminum and X represents one or more elements selected from the group consisting of yttrium, rhenium and the rare earths.

8. (previously presented) The method as claimed in claim 6, wherein the first coating also has the component surface which, for a second coating to be applied to the component, is treated with a second coating material.

9. (previously presented) The method as claimed in claim 1, wherein the component has a base body with a base material, a first coating comprising a first coating material being applied to the base body, and the coated component, for a second coating to be applied to the component, being treated with a second coating material.

10. (previously presented) The method as claimed in claim 8, wherein, in the coating process, a ceramic is used as the second coating material.

11. (canceled)

12. (previously presented) The method as claimed in claim 1, wherein the component used is a turbine rotor blade, a turbine guide vane or a heat shield element of a combustion chamber.

13. (previously presented) The method as claimed in claim 1, wherein the blasting angle on the component surface is approximately 20° to 90°.

14. (canceled)

Serial No. 10/085,527
Atty. Doc. No. 99P03591WOUS

15. (canceled)

16. (canceled)

17. (canceled)

18. (currently amended) A method for surface preparation of a metal component having a curved surface to accept a ceramic coating, comprising:

measuring a contour line geometry of the curved surface;

converting the measured geometry into input data; and

inputting the data into a control system and comparing the data to a desired data set, the control system configured to control a plurality of spray parameters based on the data and direct a particle source toward the metal component to match the desired data.

wherein at least one of the parameters remains constant during the surface treatment and the surface preparation results in the curved surface having a substantially uniform surface roughness.

19. (previously presented) The method as claimed in claim 18, wherein the particle source is moved relative to the component so that the blasting distance remains constant.

20. (previously presented) The method as claimed in claim 18, wherein the particle source is moved relative to the component in such a way that the blasting angle remains constant.

21. (currently amended) The method as claimed in claim 1, wherein the blasting distance is measured from the particle source to a point of impingement of a the spray on the metal component surface.

22. (currently amended) The method as claimed in claim 1, wherein the blasting angle is measured as an angle between a direction of the spray and a local ~~normal~~ tangent to the metal component surface at a point of impingement.

Serial No. 10/085,527
Atty. Doc. No. 99P03591WOUS

23. (previously presented) The method as claimed in claim 1, wherein the blasting intensity is measured as a flow rate of the particle.
24. (previously presented) The method as claimed in claim 1, wherein the blasting time is measured as a residence time of the spray on a selected section of the contour line.
25. (previously presented) The method as claimed in claim 18, wherein the spray parameters include: a blasting distance, a blasting intensity, a blasting angle and a blasting time.
26. (new) The method as claimed in claim 1, wherein the metal component is moved relative to the spray jet.
27. (new) The method as claimed in claim 1, wherein the metal component is rotated relative to the spray jet.
28. (new) The method as claimed in claim 1, wherein a spray head moves in two Cartesian directions and pivots.